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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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*Ex parte* BRUCE E. NOVICH, KAMI LAMMON-HILINSKI, WALTER J. ROBERTSON, XIANG WU, VEDAGIRI VELPARI, ERNEST L. LAWTON and WILLIAM B. RICE

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Appeal 2010-006642
Application 09/620,523
Technology Center 1700

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Before CHARLES F. WARREN, PETER F. KRATZ, and LINDA M. GAUDETTE, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicants appeal to the Board from the decision of the Primary Examiner finally rejecting claims 1, 12-20, 40 and 43-47 in the Office Action mailed September 19, 2008. We have jurisdiction. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2008).

We affirm the decision of the Primary Examiner.

Claim 1 illustrates Appellants' invention of a reinforced laminate

adapted for an electronic support, and is representative of the claims on appeal:

1. A reinforced laminate adapted for an electronic support, the laminate comprising:

(a) a matrix material; and

(b) at least one non-degreased fabric comprising at least one strand comprising a plurality of fibers, wherein at least a portion of the fabric has a resin compatible coating which is compatible with the matrix material in the reinforced laminate adapted for the electronic support, and the resin compatible coating comprising a plurality of particles,

wherein particles are formed from materials selected from:

non-polymeric inorganic selected from graphite, metals, carbides, nitrides, borides, sulfides, carbonates, sulfates, and mixtures thereof;

polymeric inorganic materials;

polymeric organic materials;

composite materials; and

mixtures of any of the forging.

Appellants request review of the ground of rejection under 35 U.S.C. § 103(a) advanced on appeal by the Examiner: claims 1, 12-20, 40 and 43-47 over Iketani (JP Heisei 4-307787), Nagamine (JP 1-249333) and Papageorge (WO 93/24314 A1).[1] App. Br. 9; Ans. 3.

Appellants argue the ground of rejection on claims 1 and 40 as a group. App. Br., e.g., 11. Thus, we decide this appeal based on claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2009).

Opinion

We are of the opinion Appellants' arguments do not establish that the

[1] The Examiner has withdrawn the ground of rejection under 35 U.S.C. § 103(a) over Papageorge and Nagamine.

evidence in the totality of the record weighs in favor of the nonobviousness of the claimed reinforced laminate encompassed by representative claim 1. In this respect, we are in agreement with the Examiner's analysis of the evidence in Iketani, Nagamine and Papageorge and the findings of fact and conclusions of law stated in the Answer, to which we add the following for emphasis with respect to Appellants' arguments.

We cannot agree with Appellants that one of ordinary skill in the art routinely following the combined teachings of Iketani, Nagamine and Papageorge would have not reasonably arrived at the claimed reinforced laminate that comprises at least, among other things, "a resin compatible coating which is compatible with the matrix material in the reinforced laminate," as specified in claim 1, even though none of the references disclose one or more of the three "properties' specified in the Specification as indicative of "resin compatible" with the matrix material.[2] App. Br. 11-13; Reply Br. 2-6. In this respect, we further disagree with Appellants that the combined teachings of the references would not have reasonably led one of ordinary skill in the art to modify Iketani's resin coatings containing a filler by replacing the filler particles with the filler particles of Papageorge which are specified in claim 1. App. Br. 13-14; Reply Br. 6-7.

We find that Appellants disclose that materials suitable as "a resin

[2] It is disclosed in the Specification that "'resin compatible' means the coating composition . . . achieves at least one of the following properties: [(1)] does not require removal prior to incorporation into the matrix material (such as by de-greasing or de-oiling), [(2)] facilitates good wet-out and wet-through of the matrix during conventional processing and [(3)] results in final composite products having desired physical properties and hydrolytic stability." Spec. 11:31 to 12:6.

compatible coating" include thermosetting polymeric film-forming material including, among other things, thermosetting polyesters, epoxy materials, vinyl esters, phenolics, and thermosetting polyurethanes, and that suitable matrix materials include, among other things, thermosetting materials such as thermosetting polyesters, vinyl esters, epoxides, phenolics, and thermosetting polyurethanes. Spec., e.g., 36:9-22 and 71:7-12.

We find that Iketani would have described to one of ordinary skill in the art forming a laminate by impregnating glass cloth with a thermosetting resin containing a filler, such as an epoxy resin, a polyamide resin or a phenolic resin, which is processed such that "a large amount of the filler is introduced into the gaps in the fibrous substrate and into the regions close to the surface" so that "a resin [is] uniformly distributed in a fibrous substrate." Iketani ¶¶ 0006, 0007, 0011. Iketani would have disclosed that the filler has a thermal expansion coefficient lower than that of the thermosetting resin" and can be, among other things, aluminum hydroxide and aluminum oxide. Iketani ¶ 0006.

We find that Papageorge would have described to one of ordinary skill in the art forming a laminate by impregnating glass cloth with a resin containing a filler such as an epoxy and a phenolic resin, wherein the resin is "squeezed between metering rolls to form a mat, leaving a measured amount of resin on the surface and in the voids of the medium." Papageorge, e.g., 2:14-16, 3:11-25, 4:25-32. Papageorge would have disclosed that the filler can be a highly thermally conductive material such as, among other things, aluminum nitride, diamond and silicon carbide. Papageorge, e.g., 4:25-38. *See* App. Br. 13 ("nitride, carbide or graphite as the filler material, as taught by Papageorge").

We find that Nagamine would have described to one of ordinary skill in the art forming a laminate by impregnating an untwisted glass yarn cloth with a resin such as an epoxy resin, a polyamide resin or a phenolic resin, which is processed by dropping the epoxy resin on the cloth until "completely impregnated." Nagamine, e.g., 9:1-6, 14:1-6, 17:16-26, 20:3-6.

We initially determine that while Iketani and Papageorge would not have explicitly disclosed to one of ordinary skill in the art that a plurality of filler particles can be included in the thermosetting resin coating, the person of ordinary skill would have inferred that one or more of the filler particles, taught to be compatible with the thermosetting resin, can be incorporated therein. Indeed, Appellants have neither established that the thermally conductive particles are incompatible nor that the combination of particles archives unexpected results. App. Br. 13-14; Reply Br. 6-7.

We further determine that on this record, the claimed laminate and the prior art laminate suggested by the combination of Iketani, Nagamine and Papageorge are identical or substantial identical even though none of the references would have specifically described to one of ordinary skill in the art any of the three properties specified in the Specification as establishing a "compatible resin." Indeed, the thermosetting resins used for coating disclosed by Appellants as compatible with the same thermosetting resins used as the matrix materials include the thermosetting resins taught by each of Iketani, Nagamine and Papageorge, and there is no dispute that the thermal conductive particles of Papageorge can be used as the filler in the resin coatings of Iketani. Thus, the burden of establishing the patentability of the claimed laminates encompassed by claim 1 shifted to Appellants even though the rejection is under § 103(a). *See, e.g., In re Spada*, 911 F.2d 705,

708 (Fed. Cir. 1990) ("[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not."); *In re Best*, 562 F.2d 1252, 1254-56 (CCPA 1977)[3]; *In re Skoner*, 517 F.2d 947, 950 (CCPA 1975) ("Appellants have chosen to describe their invention in terms of certain physical characteristics . . . . Merely choosing to describe their invention in this manner does not render patentable their method which is clearly obvious in view of [the reference]." (citation omitted)).

We are not convinced that Appellants have carried this burden by relying on the three properties of "compatible resin" in the Specification. Indeed, it would reasonably be expected that claimed and prior art laminates prepared with the same thermosetting resins would exhibit at least one of the three properties. In this respect, we agree with the Examiner that one of ordinary skill in the art forming a laminate according to the teachings of Iketani would not have found in the reference the direction to de-grease or de-oil the resin/filler coated glass cloth prior to incorporation into the matrix material, and Appellants have not established otherwise. Ans. 9-10; Reply Br. 5-6. Furthermore, Appellants do not argue that the conventional

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[3] Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. Whether the rejection is based on 'inherency' under 35 U.S.C. § 102, on 'prima facie obviousness' under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products."

*Best*, 562 F.2d at 1255 (footnote and citations omitted).

processing of the glass cloth coated with the resin/filler coating disclosed in the references would not have resulted in "good wet-out and wet-through." Finally, it would reasonably appear that the identical or substantially identical claimed and prior art laminates would have "desired properties and hydrolytic stability."

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Iketani, Nagamine and Papageorge with Appellants' countervailing evidence of and argument for nonobviousness and conclude, by a preponderance of the evidence and weight of argument, that the claimed invention encompassed by appealed claims 1, 12-20, 40 and 43-47 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The Primary Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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